

On-demand use of rabeprazole for the management of symptomatic GERD incurs the least cost in comparison to the other PPIs evaluated. Utility gains were comparable for all on-demand PPIs.

## PGI2

**THE ECONOMIC EVALUATION OF A RANDOMIZED TRIAL COMPARING "TEST-AND-TREAT" WITH PROMPT ENDOSCOPY IN PRIMARY CARE; THE HEALTH ECONOMICS OF THE SENSE-STUDY**

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**OBJECTIVES:** To assess the cost-effectiveness of two initial management strategies for the general practitioner in dyspepsia. The two strategies investigated are prompt endoscopy and a Helicobacter pylori test-and-treat strategy. **METHODS:** Pharmacoeconomic data was gathered alongside the SENSE (Strategy: Endoscopy versus Serology)-study from 1998 up to 2001. Patients were randomized in the endoscopy (n = 105) and test-and-treat (n = 118) group. The costs were standardized costs for 1999. Quality of life was measured at inclusion and one year later, using the validated Dutch translation of the RAND-36 questionnaire. The results obtained were transformed into one overall score, in terms of Quality Adjusted Life Years (QALYs). An incremental cost-effectiveness ratio (ICER) was calculated as incremental cost of test-and-treat over early endoscopy per QALY gained. For estimating the uncertainty we calculated 95% uncertainty limits using parametric bootstrap with angular transformation. **RESULTS:** For the test-and-treat group the total costs per patient were 511.02€ and the number of QALYs gained was 0.074 per patient. For the endoscopy group this was 748.08€ and 0.064 QALYs gained. The point estimate of the ICER indicated cost-savings and QALYs gained. Parametric bootstrap uncertainty limits indicate cost-savings per QALY gained (75.7%) and cost savings per QALY lost ranging from 11,970€ to infinity. **CONCLUSIONS:** According to our data, the Helicobacter test-and-treat strategy is more cost-effective than prompt endoscopy in the initial management of dyspepsia in general practice.

## PGI3

**COST-EFFECTIVENESS OF ESOMEPRAZOLE COMPARED TO PANTOPRAZOLE AND GENERIC OMEPRAZOLE IN ENDOSCOPY POSITIVE GERD PATIENTS IN GERMANY**

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**OBJECTIVES:** To compare the cost-effectiveness of esomeprazole versus pantoprazole and generic omeprazole from the perspective of the statutory health insurance using a decision model reflecting naturalistic treatment behaviour in GERD patients in Germany. **METHODS:** The model applies to patients with endoscopically verified GERD receiving PPI therapy and covers a period of 8 weeks. Therapies included were esomeprazole 20 and 40 mg, omeprazole 20 and 40 mg and pantoprazole 40 mg. Real-life treatment patterns and resource utilization for acute and maintenance treatment were derived from 30 physician interviews, whereas healing rates after 4 and 8 weeks of treatment were derived from published literature. Resource utilization included visits, examinations and laboratory tests at primary care physicians and specialists, drug treatment of GERD, hospitalizations and working incapacity. **RESULTS:** Total costs per

patient ranged between 137€ for esomeprazole and 202€ for pantoprazole with total healing rates after eight weeks between 85% (omeprazole) and 96% (esomeprazole). No hospitalizations were observed and the few sick leaves reported were shorter than 42 days, inducing no costs from the insurance perspective. Costs per patient healed varied between 145€ (esomeprazole) and 218€ (pantoprazole), with most of the treatments ranging closely around 200€. Due to the relatively small sample size, we tested the robustness of the results by conducting sensitivity analyses representing different degrees of standardization in input parameters. Cost-effectiveness did not differ much in either scenario; standardizing e.g. physician costs and treatment duration resulted in costs per patient healed between 163€ (esomeprazole) and 210€ (omeprazole). **CONCLUSIONS:** The results indicate that esomeprazole is a cost-effective treatment option for patients with endoscopically verified GERD treated over 8 weeks. Strongest competitor for esomeprazole is treatment with generic omeprazole. The current model will be extended to a 6 month period as soon as the data from a currently completed study will become available.

## PGI4

**USE OF CAPSULE ENDOSCOPY IN DIAGNOSING OBSCURE GASTROINTESTINAL BLEEDING: COST-EFFECTIVENESS EVALUATION FROM A EUROPEAN PERSPECTIVE**

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**OBJECTIVES:** To analyze the cost-effectiveness of capsule endoscopy (CE) in diagnosing obscure gastrointestinal bleeding (OGIB) from a health care payer perspective in France, the UK, and Switzerland. **METHODS:** Based on clinical trial data, a microsimulation model incorporating first- and second-order Monte Carlo simulation was developed. The model calculates the costs per correctly diagnosed case in patients with OGIB. Sensitivity and specificity for CE and the comparator push enteroscopy (PE) as well as kind and number of other procedures performed prior to diagnosis were evaluated from 7 controlled clinical trials (n = 184). Procedure cost, cost of diagnostic failure (false positive/negative diagnosis) were considered and incremental cost-effectiveness ratios dependent on disease prevalence are given. Cost data were estimated from a healthcare payer perspective using the "Assurance Maladie" (France), NHS Reference Cost (UK), and the TARMED (Switzerland). **RESULTS:** Sensitivity for CE was 89–99% and 27–60% for PE. Specificity values were 90–99% for CE and 50–70% for PE. In all 5 countries, CE was cost saving when the prevalence of the disease was 10% or higher. Most common use for CE is at a prevalence of 50%. Cost savings at a prevalence of 50% are 1508€ (France), 1695€ (UK) and 2240€ (Switzerland). Probabilistic sensitivity analyses approved a high robustness for these results. **CONCLUSIONS:** CE proved to have a higher effectiveness than PE when diagnosing obscure bleeding. Though procedure costs vary substantially from country to country, incremental analysis shows that the use of CE has a cost-saving potential in all three countries.

## PGI5

**COSTS BENEFITS WITH ESOMEPRAZOLE 20 MG "ON-DEMAND" TREATMENT IN GASTROESOPHAGEAL REFLUX DISEASE (GERD) PATIENTS IN BELGIUM**

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**OBJECTIVES:** Assessing the potential increase in GERD medical treatment expenses and the impact of on-demand treatment with

esomeprazole. **METHODS:** The number of patients with GERD was derived from epidemiological studies. The number of proton pump inhibitor (PPI) users was calculated from IMS publications and reimbursement data provided by sick-funds. According to clinical practice, in future, the number of patients taking a PPI will be the number of weekly GERD sufferers. Alternatively, future PPI users will comprise patients currently receiving a PPI plus those currently using H<sub>2</sub>-receptor antagonists, plus a large part of current antacids users. Results of on-demand treatment come from the ONE study (2-arm parallel study over a 6-month maintenance period, on-demand versus continuous therapy with esomeprazole 20 mg). **RESULTS:** A total of 28% of the Belgian adult population ( $n = 10$  million) have GERD symptom(s), 11% weekly, 4% daily. Assuming stable prevalence of GERD over the next decade, the number of PPI-treated patients could reach approximately 920,000/year from 446,000 currently. Yearly expenses would therefore increase from 149€ to 248€ million. This would be reached by 2010 with linear growth or 2005 with exponential growth. In 2652 Belgian patients with a similar profile to the screened population of the epidemiological studies, the ONE study showed on-demand treatment (mean daily intake: 0.6 tablet) was similar to continuous treatment (1 tablet/day) for patient satisfaction (92% in both groups), heartburn relapse (11.3% vs. 9.4%, respectively) and GERD-related co-medication intake (8% vs. 7.3%, respectively). Over a 7-month treatment period (4 weeks of acute treatment then 6 months' maintenance), on-demand esomeprazole 20 mg would save approximately 27.5% on medication costs compared with continuous esomeprazole therapy. **CONCLUSIONS:** Increasing costs due to the expected increased use of PPIs can be lowered by using an effective PPI with an on-demand approach, which maintains high patient satisfaction and efficacy.

PGI6

#### **ECONOMIC EVALUATION OF RABEPRAZOLE VS. OMEPRAZOLE IN THE CURATIVE TREATMENT OF REFLUX OESOPHAGITIS**

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**OBJECTIVES:** Gastro Esophageal Reflux Disease (GERD) is a chronic condition that may affect patients' quality of life. It is one of the most common complaints in primary care settings with relevant consequences on health economics in terms of increasing health costs and limiting resources. An objective of this multicentre trial was to evaluate the time of action of rabeprazole 20 mg daily (RAB) and omeprazole 20 mg daily (OME) in inducing symptom relief in patients with reflux oesophagitis in the curative phase. A prospective health economic analysis was performed to compare the costs of the 2 treatments in obtaining symptoms improvement. **METHODS:** A total of 484 patients, with mild to severe reflux oesophagitis (Savary-Miller grade I to III), were randomised in a double-blind, parallel group fashion, to receive RAB or OME for a period of 4 to 8 weeks with control visits every two weeks. The patients had to fill in a daily diary regarding to the number of tablets/capsules taken, and the daytime and night time heartburn intensity using the following score: absent, mild, moderate, severe and terrible. The economic analysis was designed and carried out from a societal and National Health Service perspective. **RESULTS:** In the curative phase of reflux oesophagitis (4–8 weeks) treatment with RAB (20 mg) resulted less expensive than OME (20 mg). The estimated mean total costs were found to be lower in RAB group (58.04€) than in the OME one (64.34€;  $p < 0.001$ ). With regard to numbers of symptom-free days, RAB (67.1%) was

found to be more effective than OME (66.8%). **CONCLUSIONS:** Rabeprazole (20 mg) once daily is cost effective compared with omeprazole (20 mg) once daily in the curative phase of reflux oesophagitis. Rabeprazole represents good value for money and efficient use of health care resources in the treatment of reflux oesophagitis.

PGI7

#### **COST BENEFIT ANALYSIS OF TWO TREATMENTS FOR PATIENTS WITH CHOLEDOCHOLITHIASIS AND CHOLECYSTOLITHIASIS**

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**OBJECTIVES:** Endoscopic and laparoscopic surgeries are now widely used to treat patients with stones in gallbladder and common bile duct (CBD). The objectives of this study were to compare the economic and clinical results between two methods in the treatment of stones in gallbladder and CBD. **METHODS:** A computer model was established to assess the cost-benefit of two types of treatment from the provider's perspective. Treatment A provided two-stage procedure, which performs endoscopic sphincterotomy (EST) first and then followed by laparoscopic cholecystectomy (LC) (EST + LC). Treatment B is a one-stage procedure that performs laparoscopic surgery alone to remove both the gallbladder and stones in common bile duct (LCBDE + LC). Sources of parameters for the simulation model came from the results of published articles and patients received endoscopic and/or laparoscopic surgery in a medical center. **RESULTS:** Treatment B had a better successful rate than that of treatment A and a shorter length of hospital stay. However, treatment A had better stone removal rate. Under current insurance payment schedule, the net benefit of treatment A is NT\$ 16,816 and NT\$ -11,603 for treatment B. Therefore, it will be cost-beneficial to do EST + LC under current payment schedule. Sensitivity analysis showed that hospitals must reduce the cost of LCBDE + LC to NT\$ 44,500 to avoid loss (currently NT\$ 85,513). If the cost of LCBDE + LC can be reduced to 33,000, it can achieve the same benefit as EST + LC. **CONCLUSIONS:** Providers should hold the therapy of EST + LC to be the major treatment under current insurance payment schedule. LCBDE + LC is not commonly performed in Taiwan because of insufficient payment. However, it has the advantage of reducing patients' suffering, shorter operation waiting time, and shorter hospital stay. It would be beneficial to patients if hospitals can reduce the cost of LCBDE + LC and perform the procedure when appropriate.

PGI8

#### **PHARMACOECONOMIC ASPECTS OF CROHN'S DISEASE IN SLOVAKIA**

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**OBJECTIVES:** There have been only a few studies published in the world literature to date dealing with the pharmacoeconomics of Crohn's disease including east and central European countries. **METHODS:** The retrospective cost of illness study was carried out by the analysis of all medical records and by special questionnaire of patients suffering from Crohn's disease in 1999–2000. **RESULTS:** Of 54 patients, 30 women, and 24 men, with the average age of 48.8 years and with the average duration of illness of 75.8 months, were divided into 3 subgroups from the point of view of pharmacoeconomics: A,—uncomplicated, 24 persons, B,—with chronic corticosteroid treatment, 12